Monitoring hurricane impacted mangrove using remote sensing

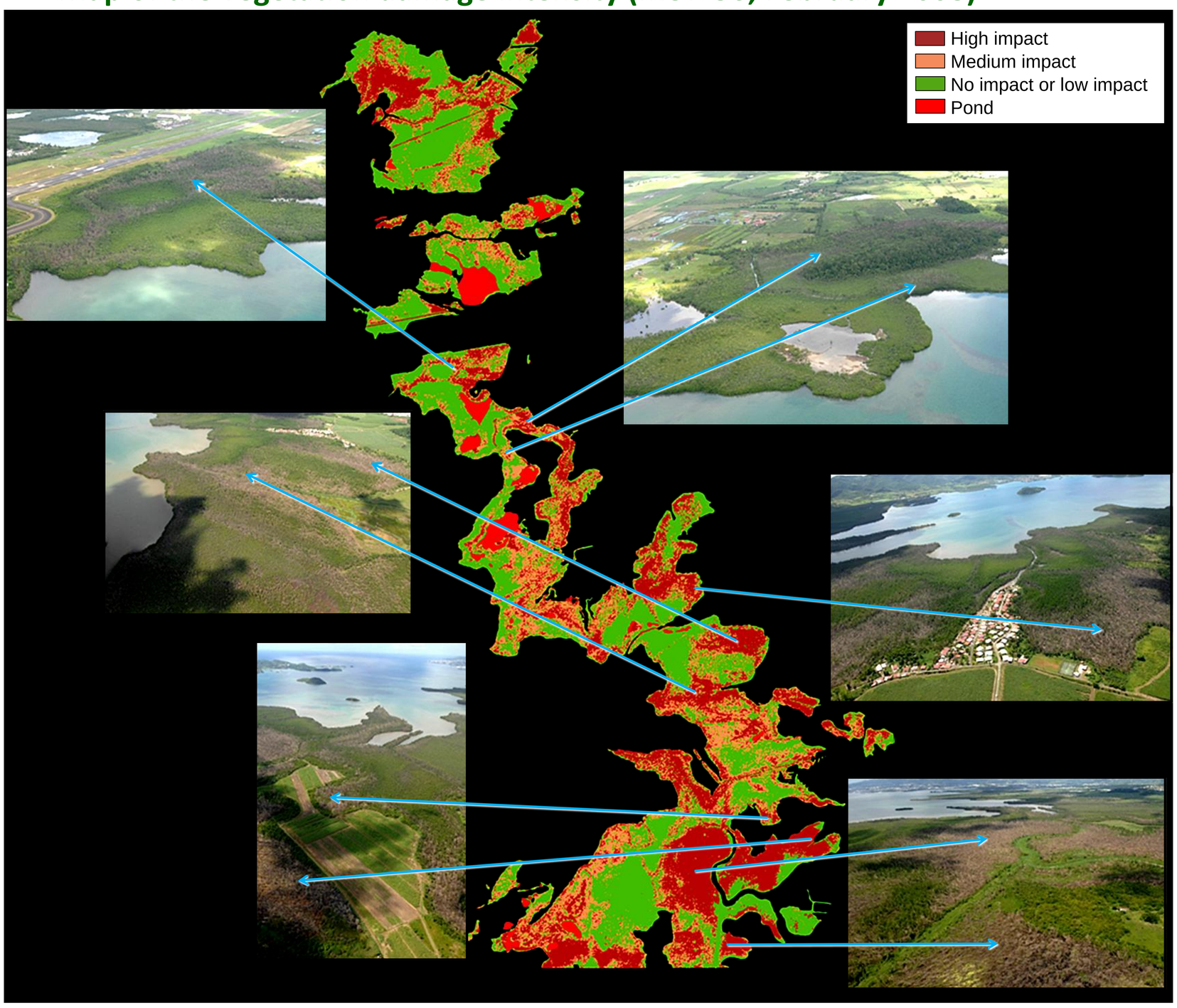
Satellite images for mangrove monitoring

In August 2007, DEAN Hurricane strongly impacted the mangrove of Génipa Bay in Martinique (1200 ha).

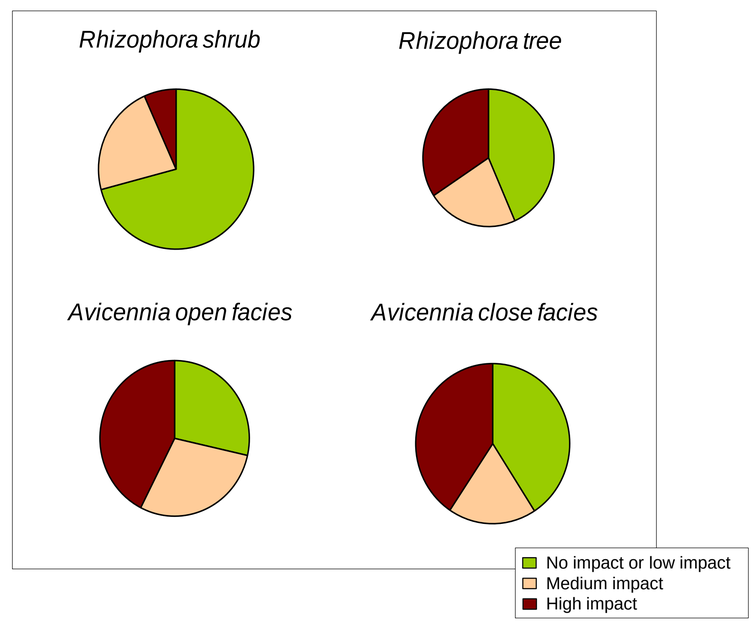
Ground observations, and high and very high spatial resolution images (SPOT5 and IKONOS) are used to map the damages and the dynamic of the vegetation formations (Project CARIBSAT, Action 5).

The methods used are "object" and "pixel" classifications of the image spectral data and of texture indices calculated on theses images.

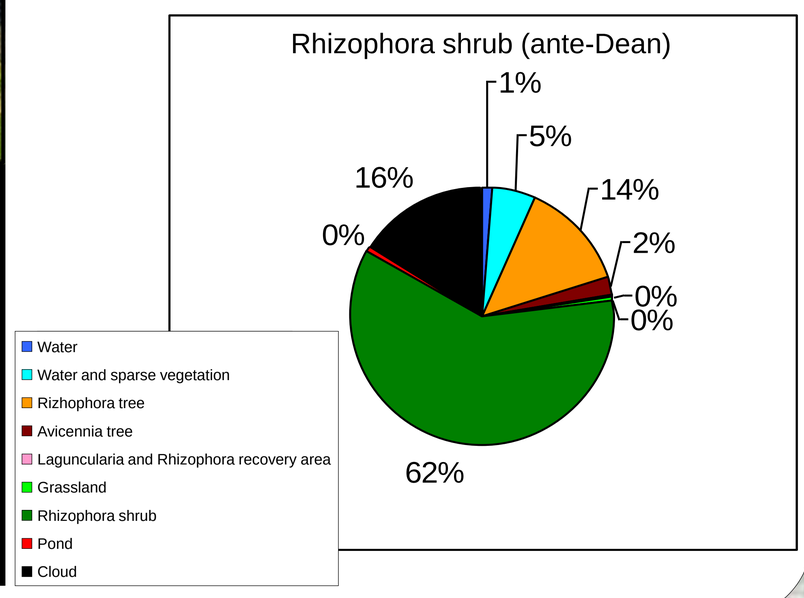
Map of the vegetation damage intensity (IKONOS, February 2008)



Damage intensity by facies



Indicator of change by facies (example)



The 2006 (ante DEAN), 2007 (post DEAN) and 2010 (post DEAN + 3 years) image processing allows to:

- Map the vegetation formations facies before and after the hurricane;
- Map the damage intensity and quantify the mangrove surface loss (around 200 ha);
- Quantify the damage per facies;
- Qualify the mangrove vegetation recovery.

M. CLADEN et A. BEGUE (CIRAD, UMR TETIS), D. IMBERT (UAG), D. GUIRAL (IRD), P. LAUNE (PNRM), B. DE GAULEJAC (IMPACT-MER) Projet CARIBSAT (www.caribsat.com) – Janvary 2012

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